Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 133 (2014) 491 – 498

Procedia
Social and Behavioral Sciences

ICTMS-2013

E-waste consciousness and disposal practices among residents of Pune city

Viraja Bhat*, Yogesh Patil

[*a]Symbiosis Institute of International Business, Symbiosis International Univeristy, Hinjewadi, Pune, India
[b]Symbiosis Institute of Research and Innovation, Symbiosis International University, Lavale, Pune, India

Abstract

The authors attempted to study and comprehend the e-waste awareness and disposal practices among residents of Pune city. It was revealed through survey data and the analysis that in general, the consumer awareness in Pune city is very good, but at the superficial level; however, when it comes to the disposal practices the residents are not aware of the collection centres, the E-waste rules, and correct disposal practices. Residents therefore mix-up the E-waste generated along with municipal solid waste thereby leading to unsustainable way of disposal practices. Ministry of Environment and Forests (MoEF) has played a key role by formulating the E-waste policy and it is the high time for consumers to shoulder the responsibility in management of E-waste. Also there is an urgent need to explore unlimited business opportunities and scope for developing sustainable models for E-waste management.

Keywords: E-waste awareness, Residents, Disposal channels, E-waste (Management & Handling) Rules, 2011

1. Introduction

The role of the Information and Communication Technology (ICT) in today's web based is a necessity and not a luxury. It facilitates the participation of the developed and developing nations to be a part of the global village and also acts as a fuel for the development and economic growth. The use of ICT in almost all of the sectors is a reality

* Corresponding author. Tel.: +0-000-000-0000 ; fax: +0-000-000-0000 .
E-mail address: viraja@siib.ac.in

doi:10.1016/j.sbspro.2014.04.216

and very popular among the masses as it keeps them abreast in the knowledge revolution. ICT acts as a gateway for knowledge sharing, connectivity, access to remote resources with the help of the newer technologies in the form of mobiles, internet, i-pads, laptops, etc. The common public is immensely benefitted by the technology aided household electronic products like television, refrigerators, washing machines, microwaves, etc. which play a considerable role in making the daily routines comfortable and smooth. In general, it is being experienced that ownership of these electronic products are not affected by diversity in income, education and locality; however they all equally contribute to the piles of a new stream of waste from the used electronic devices known as E-waste and is one of the most rapidly expanding waste streams in the world. Increasing demand for the newer electronic appliances due to change in incomes, life style, fashion etc. both in developed and developing countries is further resulting into high volumes of the e-waste mountains being built in developing nations

E-waste, also known as WEEE (Waste Electrical and Electronic Equipment) or EOL (End of Life) electronics are the electronic appliances such as computers, laptops, televisions, DVD players, mobile phones, etc. including their assembly, subassembly , components and consumables, which have been disposed of or unwanted by their original users (Wath et. al, 2010). E-waste is a generic term encompassing various forms of electrical and electronic equipment (EEE) that are old, end-of life electronic appliances and have ceased to be of any value to their owners" (UNEP Report, 2007). As per the Ministry of Environment and Forests, Govt. of India's E-waste (Management & Handling Rules), 2011, E-waste means waste electrical and electronic equipment, whole or in part or rejects from their manufacturing and repair process, which are intended to be discarded.

It is well known that the composition of E-waste is diverse and differs in products across different categories (Hidy et. al. 2011). It consists of more than one thousand different substances, which fall under 'hazardous' and 'non-hazardous' categories (Wath et.al, 2010). Annually, generation of E-waste is to the tune of 40 million tons (Schluep et al., 2009). Around 3.3 hundred thousand tonnes of E-waste is generated annually in India (Chaturvedi et.al, 2010). In developing countries, E-waste constitutes to 1-2% of total solid waste generation and expected to grow to 2% by 2010 (UNEP Report, 2007).

E-waste contains highly valuable and toxic non-renewable materials (Bhat et al. 2012) capable of getting recovered and recycled thereby creating a lucrative business opportunities. Several developed nations follow easy route and frequently move WEEE to the developing countries for processing. Countries like China, India and Nigeria with a large unemployed illiterate population and have no strong regulatory framework offer an excellent readymade ground for import of the e-waste for processing. The treatment to these wastes is carried out in an unregulated manner and manually by women, children who are unaware of the aftereffects of these processes on their lives. The high toxicity of the component materials in WEEE especially when burned or recycled in an uncontrolled manner leads to many socio economic problems. Haphazard disposal of E-waste may lead to the deterioration of ecological and human systems (Grant et al, 2013). Managing E-waste in a formal, systematic and eco-friendly manner by way of removing/recycling the precious metals from waste streams is an urgent need and hence there is an unlimited business opportunity and scope for academicians in developing sustainable models (Bhat et.al, 2012). Several studies are being conducted world across for the removal and recovery of non-renewable resources from waste (Gaddi and Patil, 2011; Itankar et al., 2013; Patil, 2012).

Individual consumer's awareness is one of the major challenges in the e-waste management as it is not only sufficient to frame and implement the regulatory framework which defines clearly the roles of various stakeholders. Individual consumers, the sources of E-waste generation, lack in awareness and basic civic sense among the city residents a pose hurdle to manage E-waste. Consumer awareness plays a major role to route E-waste to the authorized collection centres and authorized recyclers for safe disposal. Majority of the population using e-goods are innocent and ignorant about the consequences of the e-wastes generated and disposed irrationally on the environment, ecology and health of current and future generation. In India, Maharashtra state tops the rank among 10 states in E-waste generation and the city of Pune ranks 8th. Pune is the developing hub for Information and Technology sector and also the cultural capital of Maharashtra. It is also known as the "Oxford of the East". Pune citizens and the corporation is contributing significantly in achieving the zero garbage status in terms of solid waste management with state-of-the-art waste management processes and systems. However, Pune lacks the functional elements of E-waste transit systems and processes to handle the e-waste. The present paper attempts to understand the E-waste consciousness and disposal practices among residents of Pune City with reference to the E-waste (Management & Handling) Rules 2011, implemented from May 2012.